

FIG. 1

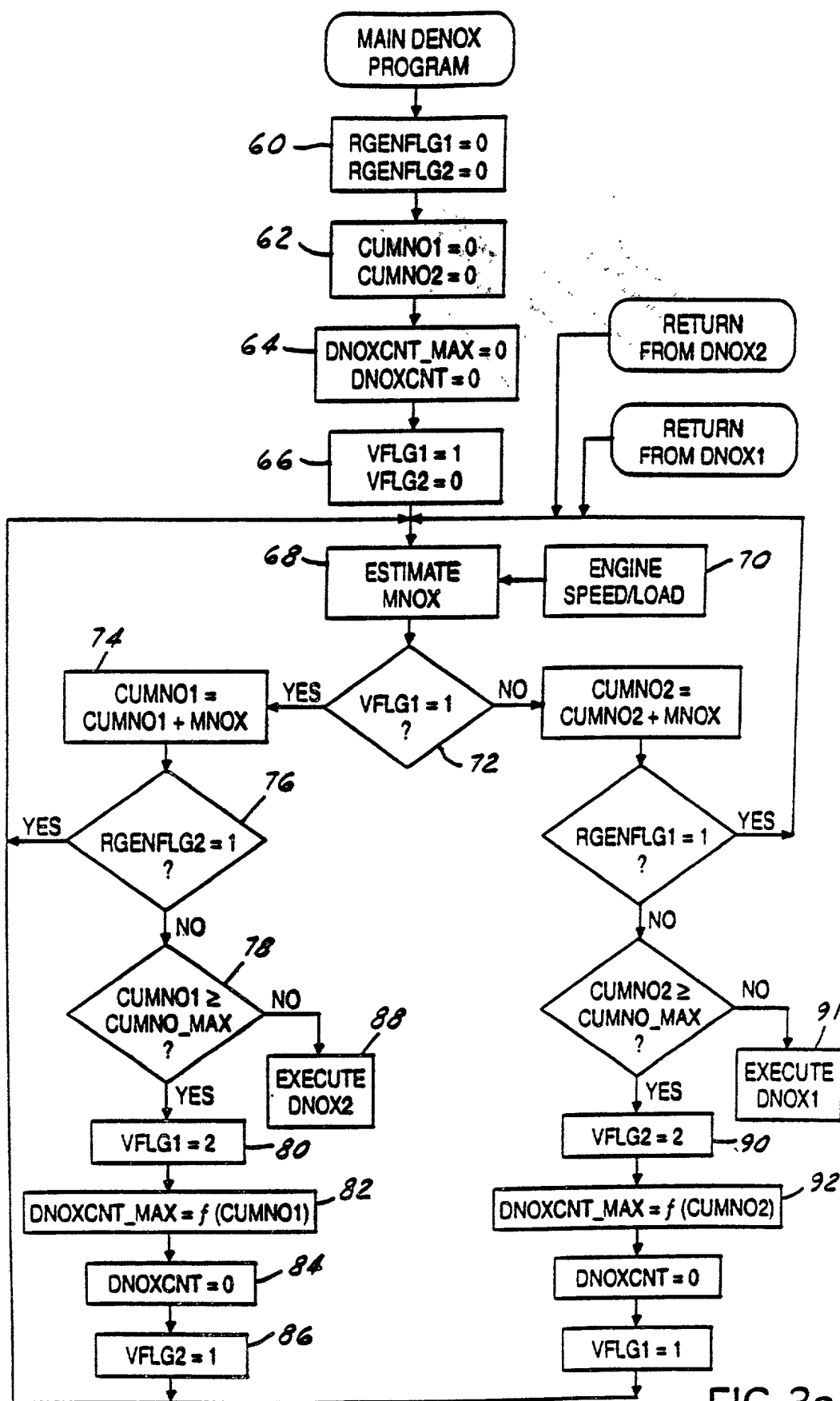
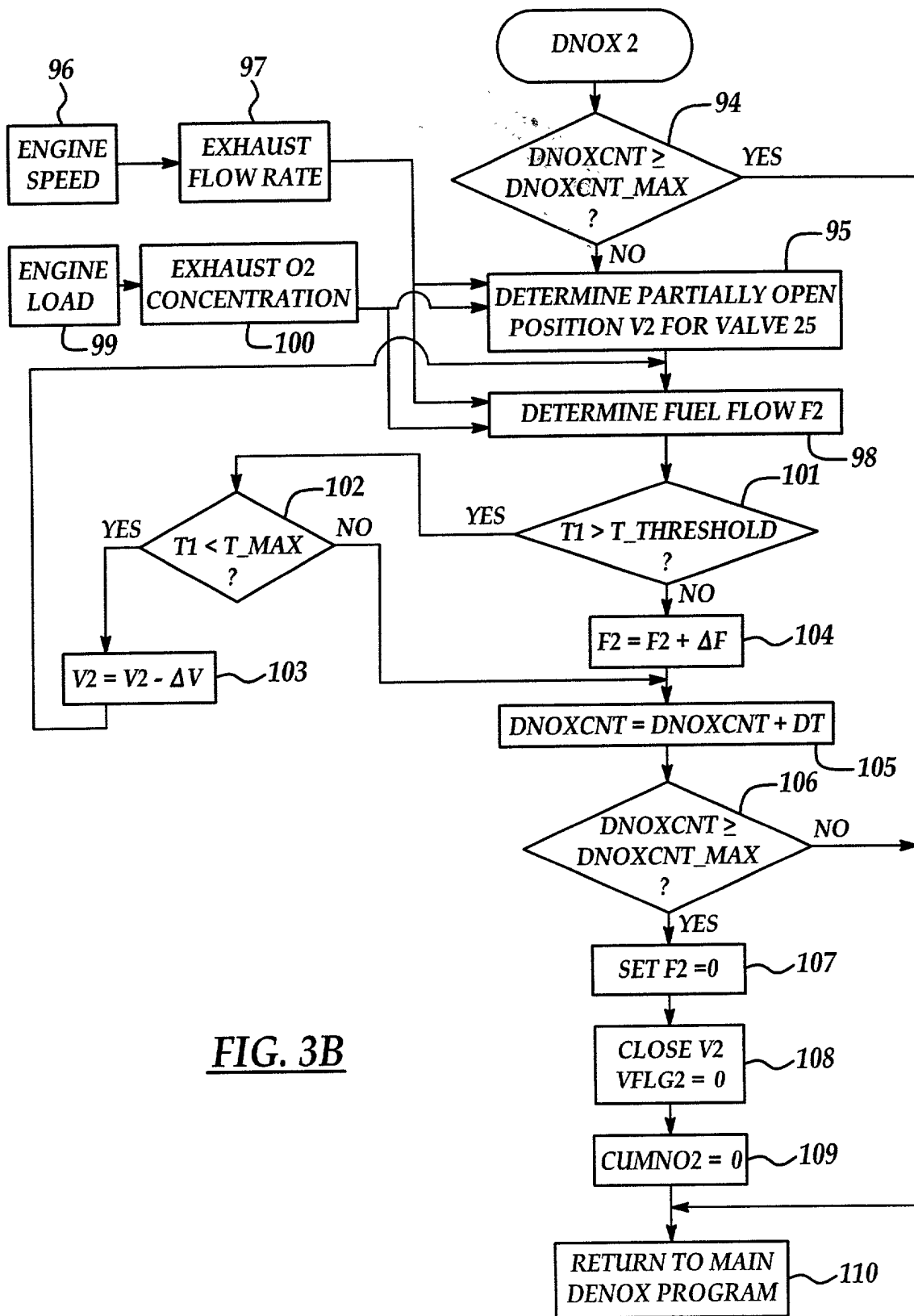


FIG. 3a



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graph TD
    Start([MAIN PM AND SOXREG PROGRAM]) --> Init[RGENFLG1 = 0  
RGENFLG2 = 0]
    Init --> CumPMInit[CUMPM1 = 0  
CUMPM2 = 0]
    CumPMInit --> CumSOXInit[CUMSOX1 = 0  
CUMSOX2 = 0]
    CumSOXInit --> VFLGInit[VFLG1 = 1  
VFLG2 = 0]
    
    VFLGInit --> LoopStart(( ))
    ReturnSOXREG2([RETURN FROM SOXREG2]) --> LoopStart
    ReturnSOXREG1([RETURN FROM SOXREG1]) --> LoopStart
    
    subgraph MainLoop [ ]
        direction TB
        LoopStart --> EstMPM[ESTIMATE MPM]
        EngSpeedLoad[ENGINE SPEED/LOAD] --> EstMPM
        EstMPM --> EstMSOX[ESTIMATE MSOX]
        EngFuelFlow[ENGINE FUEL FLOW] --> EstMSOX
        
        EstMSOX --> VFLG1Dec{VFLG1 = 1 ?}
        
        VFLG1Dec -- YES --> CumPM1Add[CUMPM1 = CUMPM1 + MPM]
        CumPM1Add --> CumSOX1Add[CUMSOX1 = CUMSOX1 + MSOX]
        CumSOX1Add --> CumPM1MaxDec{CUMPM1 ≥ CUMPM1_MAX ?}
        CumPM1MaxDec -- NO --> CumSOX1MaxDec{CUMSOX1 ≥ CUMSOX1_MAX ?}
        CumSOX1MaxDec -- YES --> ExecPMReg1[EXECUTE PMREG1]
        CumPM1MaxDec -- YES --> ExecPMReg1
        
        VFLG1Dec -- NO --> CumPM2Add[CUMPM2 = CUMPM2 + MPM]
        CumPM2Add --> CumSOX2Add[CUMSOX2 = CUMSOX2 + MSOX]
        CumSOX2Add --> CumPM2MaxDec{CUMPM2 ≥ CUMPM2_MAX ?}
        CumPM2MaxDec -- NO --> CumSOX2MaxDec{CUMSOX2 ≥ CUMSOX2_MAX ?}
        CumSOX2MaxDec -- YES --> ExecPMReg2[EXECUTE PMREG2]
        CumPM2MaxDec -- YES --> ExecPMReg2
    end
    
    ExecPMReg1 --> LoopStart
    ExecPMReg2 --> LoopStart

```

FIG. 4a

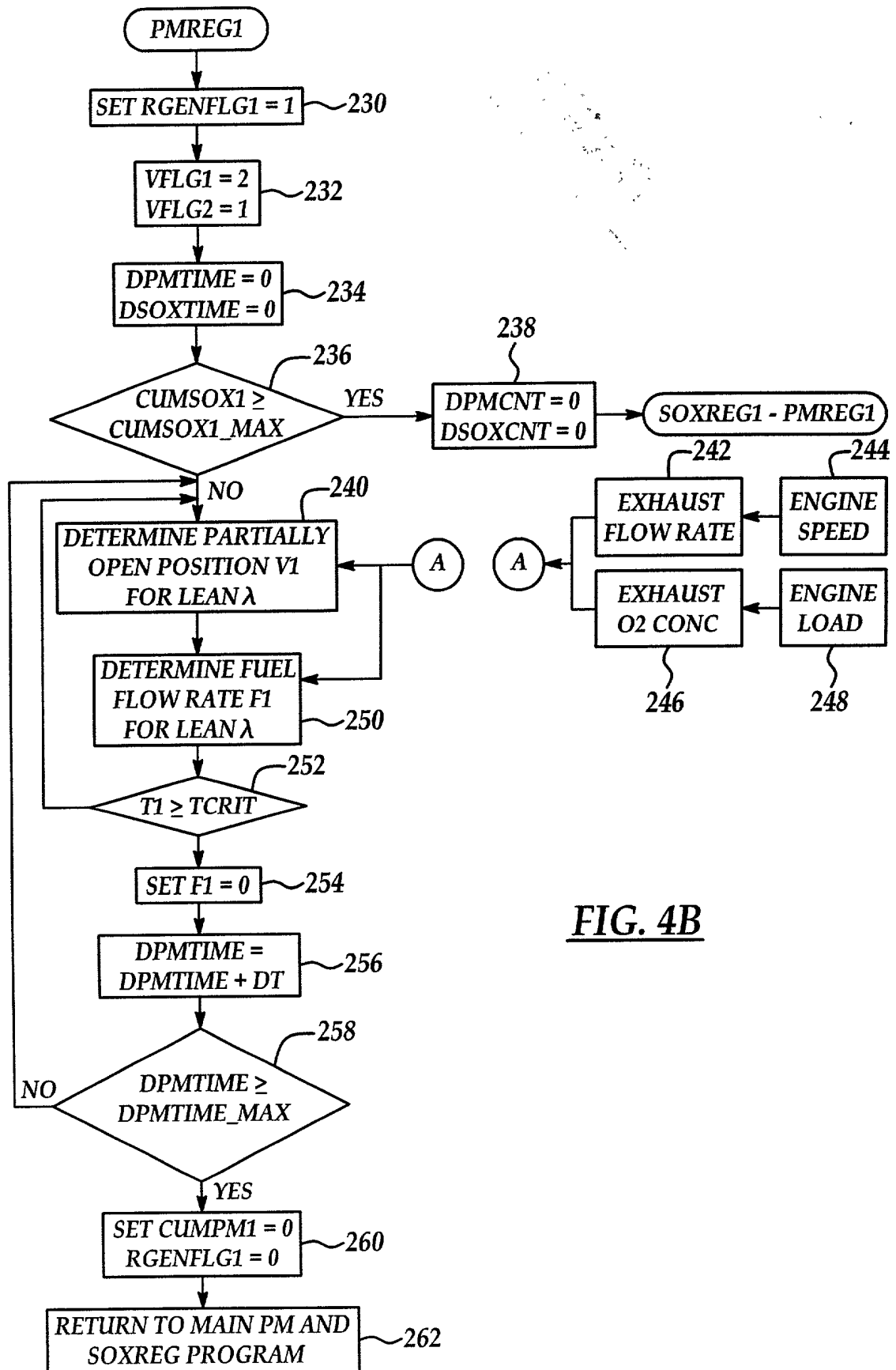
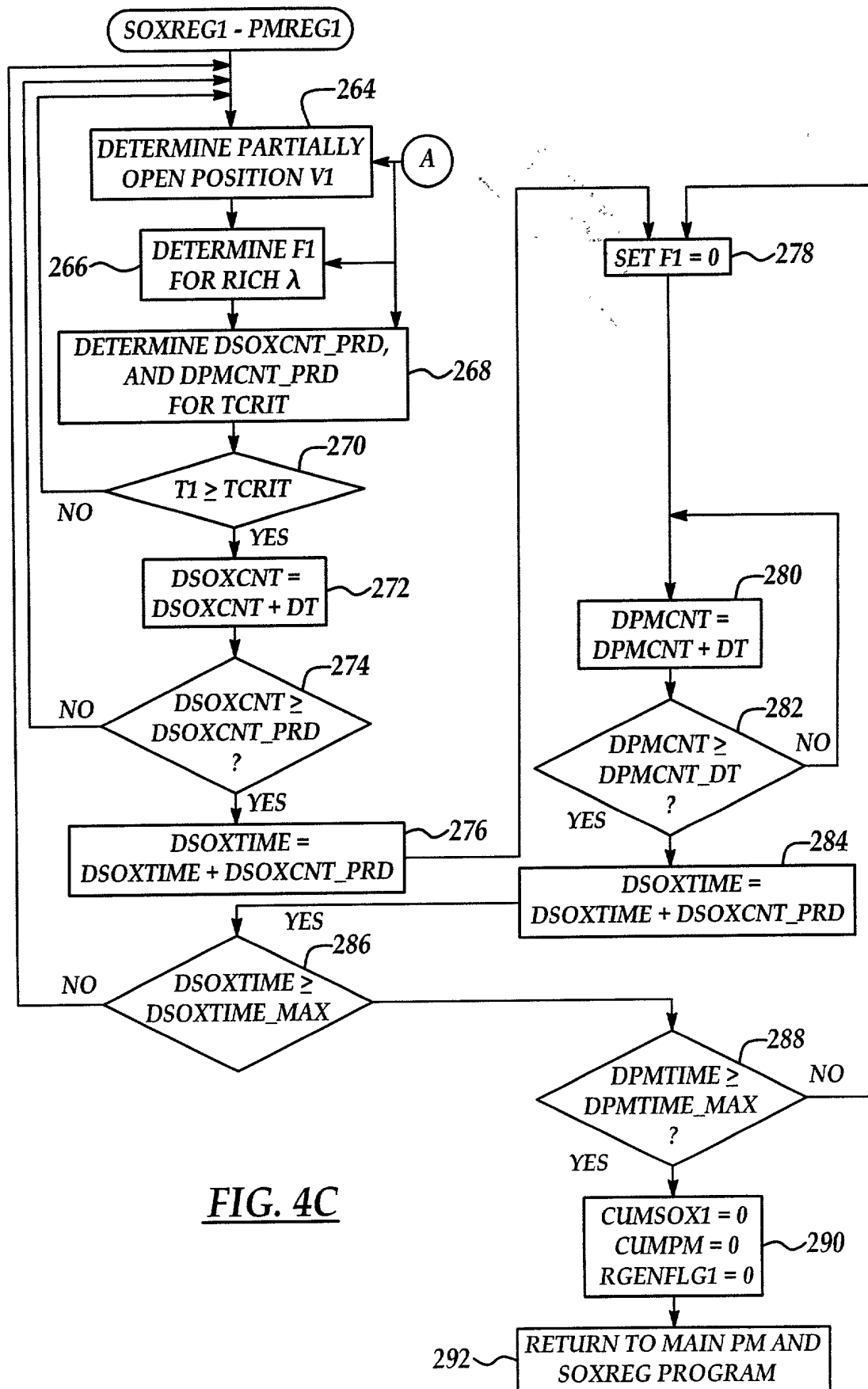


FIG. 4B



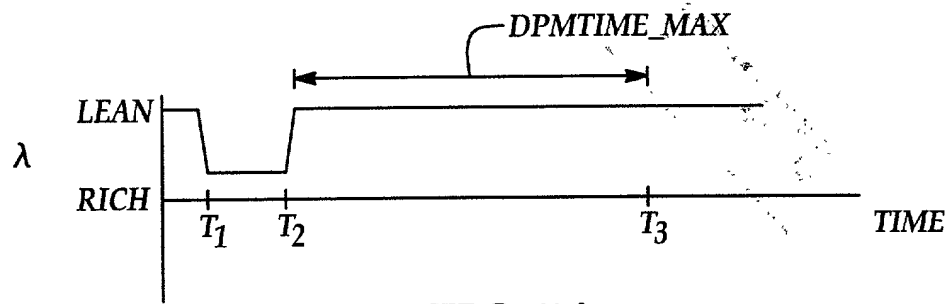


FIG. 5A

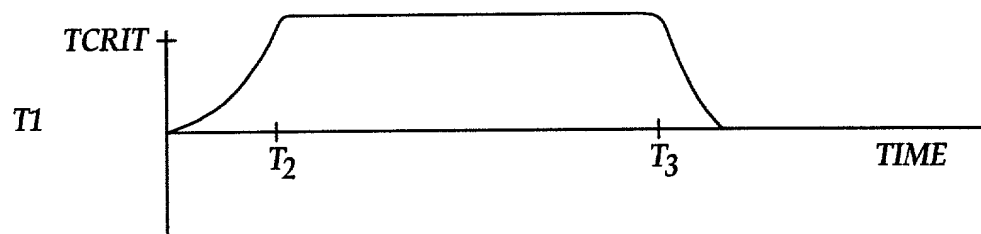


FIG. 5B

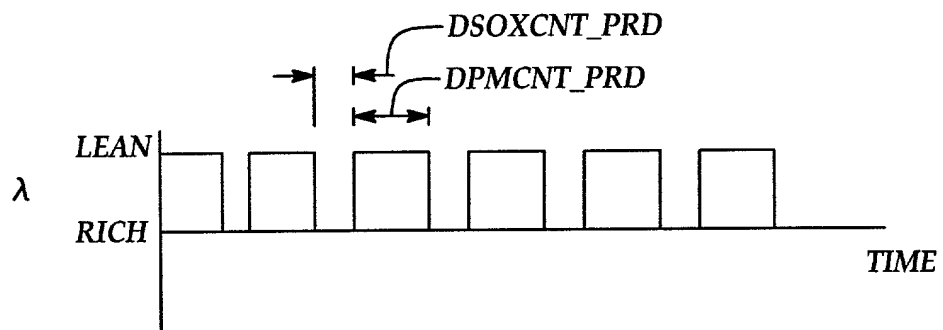


FIG. 6A

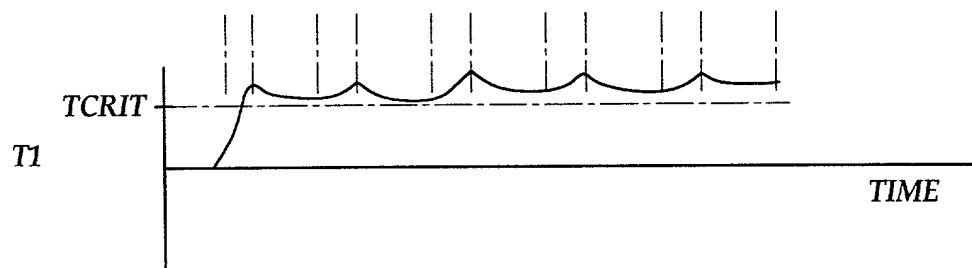


FIG. 6B